



09/872,713

In the Abstract:

Please amend the Abstract of the Disclosure, presently on file, as follows in which the additions are shown by underlining and the deletions are shown by strikeout. Please enter the amended Abstract of the Disclosure into the record of this case.

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In another aspect of the present invention, the thermal conductive material comprises an organic material of which melting ~~[[point]]~~ transition is in the range of 30-70°C. Therefore, when heat is applied from the electronic component and the temperature of the organic material reaches the melting ~~[[point]]~~ transition, for example, the organic material gets liquidized. At this time, a filler having high thermal conductivity is evenly dispersed within the liquidized organic material. The thermal conductive material of the present invention then changes its form (plasticizes itself) corresponding to the outer shape of which it comes in contact with and maintains the form thereafter.

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In addition to having the melting ~~[[point]]~~ transition in the range of 30-70°C, the organic material of the thermal conductive material has ~~[[a]]~~ the viscosity at 100°C equal to or above 70,000cP, and also the ratio of the filler to the whole thermal conductive material is in the range of 30-90 weight %.

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A material having the melting ~~[[point]]~~ transition in the range of 30-70°C and the viscosity at 100°C equal to or above 70,000cp is used for the organic material. Specifically, olefin resin, such as unvulcanized EPDM, ethylene-vinyl acetate copolymer, polyethylene, polyisobutylene and ethylene-ethyl ~~acrylate~~ copolymer alcohol, which satisfies the above conditions of the melting ~~[[point]]~~ transition and the viscosity can be used. In particular, an organic material flexible at room temperature is preferred. For example, an unvulcanized EPDM having 7,000-50,000 molecular weight can satisfy the above conditions.

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When the thermal conductive material 10 receives heat from an electronic component and its temperature rises to the melting ~~[[point]]~~ transition the organic material 30 contained in the thermal conductive material 10, the organic material 30 is liquidized. The thermal conductive material 10 at this state is plasticized and is flexible enough to change its form.

PAGE 12, TABLE 1

	Melting point transition of organic material (°C)	Flexibility of organic material at room temperature	Viscosity of organic material at 100°C (cP)	Ratio of filler (wt%)	Liquid dripping at 100°C	Thermal conductivity (W/K • m)
Ex. 1	45	High	70,000	70	No	2.5
Ex. 2	45	High	70,000	55	No	2.3
Comp. Ex. 1	45	High	70,000	0	Yes	-
Comp. Ex. 2	40	Low	500	60	Yes	1.0

ABSTRACT OF THE DISCLOSURE

A thermal conductive material is obtained by kneading an organic material, having the melting ~~point~~ transition in the range of 30-70°C and the viscosity at 100°C equal to or above 70,000cP, and a filler at the ratio of 100:40-900. It has a property of flexibly changing its form by being plasticized due to liquidation of the composing organic material upon receipt of heat from an electronic component. Accordingly, adhesion of the thermal conductive material toward the electronic component and a heat sink is increased and thermal conductivity is improved. Additionally, since the thermal conductive material changes its form according to the outer shape of the electronic component, load is evenly applied to the whole electronic component and does not concentrate on part of the electronic component.